WE CLAIM:

1. A method of modulating the E-field of an optical carrier signal, the method comprising steps of:

   providing a Mach-Zehnder modulator having a pair of independently controllable branches;

   deriving a pair of independent branch drive signals $V_L(t)$ and $V_R(t)$; and

   driving each branch with a respective one of the independent branch drive signals.

2. A method as claimed in claim 1, wherein the step of deriving the pair of independent branch drive signals $V_L(t)$ and $V_R(t)$ comprises steps of:

   deriving respective phase and amplitude signal component values V_ϕ and V_S;

   calculating corresponding drive signal values in accordance with:

   $V_L(t)=V_\phi(t)+V_S(t)$ and

   $V_R(t)=V_\phi(t)-V_S(t)$

3. A method as claimed in claim 2, wherein the step of deriving the phase and amplitude signal component values V_ϕ and V_S comprises steps of:

   calculating respective phase and amplitude values ϕ and S of the optical E-field;

   scaling the calculated phase and amplitude values to obtain respective scaled phase and amplitude values ϕ' and S';

using a phase response of the MZ modulator to calculate the phase signal component value V_ϕ required to produce the scaled phase value ϕ; and

using an amplitude response of the MZ modulator to calculate the amplitude signal component value V_S required to produce the scaled amplitude value S'.

4. A method as claimed in claim 3, wherein the step of scaling the calculated phase and amplitude values comprises a step of limiting the phase ϕ to a predetermined range of phase angles.

5. A method as claimed in claim 4, wherein the predetermined range of phase angles has a span of less than 180 degrees.

6. A method as claimed in claim 5, wherein the predetermined range of phase angles has a span of about 90 degrees.

7. A method as claimed in claim 3, wherein the step of deriving phase and amplitude values comprises a step of offsetting the calculating phase and amplitude values so as to substantially eliminate trajectories proximal to an origin.

8. A method as claimed in claim 3, wherein the step of scaling the calculated phase and amplitude values comprises a step of limiting the amplitude S to values of one or lower.